

AA
We claim:

1. A composition comprising a substantially purified nucleotide sequence encoding a cdn.

5

2. The composition according to claim 1 wherein the nucleotide sequence is derived from genomic DNA.

10

3. The composition according to claim 1 wherein the cdn is cdn-1.

4. The composition according to claim 3 having the nucleotide sequence depicted in Figure 3.

15

5. The composition according to claim 1 wherein the cdn is cdn-2.

20

6. The composition according to claim 5 having the nucleotide sequence depicted in Figure 5.

7. A composition comprising a recombinant DNA vector encoding a cdn.

25

8. The composition according to claim 7 wherein the CDN is CDN-1.

9. The composition according to claim 8 wherein the nucleotide sequence is depicted in Figure 3.

30

10. The composition according to claim 7 wherein the CDN is CDN-2.

35

11. The composition according to claim 10 wherein the nucleotide sequence is depicted in Figure 5.

12. The recombinant DNA vector according to claim 7 wherein expression of the sequence encoding the cdn under control of an inducible promoter.

5 13. A composition comprising a cell transfected with a recombinant DNA vector encoding a cdn.

14. The composition according to claim 13 wherein the CDN-1.

10 15. The composition according to claim 14 wherein the nucleotide sequence is depicted in Figure 3.

15 16. The composition according to claim 13 wherein the CDN is CDN-2.

17. The composition according to claim 16 wherein the nucleotide sequence is depicted in Figure 5.

20 18. A transgenic animal comprising a recombinant DNA vector encoding a CDN.

25 19. The transgenic animal according to claim 18 wherein the CDN is CDN-1.

20. The transgenic animal according to claim 19 wherein the cdn nucleotide sequence is depicted in Figure 3.

30 21. The transgenic animal according to claim 18 wherein the CDN is CDN-2.

35 22. The transgenic animal according to claim 21 wherein the cdn nucleotide sequence is depicted in Figure 5.

50
-30-

23 A composition comprising a substantially purified CDN protein.

5 24. The composition according to claim 23 wherein the CDN is CDN-1.

10 25. The composition according to claim 24 wherein the nucleotide sequence is depicted in Figure 3.

15 26. The composition according to claim 23 wherein the CDN is CDN-2.

27. The composition according to claim 26 wherein the nucleotide sequence is depicted in Figure 5.

20 28. The composition according to claim 23 wherein the proteins are expressed by recombinant DNA.

29. The composition according to claim 23 wherein the proteins are native proteins.

30. A composition comprising the proteins according to claim 23 and a pharmaceutically acceptable buffer.

31. The composition according to claim 30 wherein the proteins are present in therapeutically effective amounts.

32. A composition comprising a monoclonal or polyclonal antibody which recognizes a CDN but is substantially unreactive with other members of the bcl family.

35

33. A method of detecting the presence of a CDN protein in a biological sample comprising the steps of:

- 5 a) obtaining a cell sample;
- b) lysing or permeabilizing the cells to antibodies;
- c) adding anti-cdns-specific antibodies to the cell sample;
- d) maintaining the cell sample under conditions that allow the antibodies to complex with thecdn; and
- e) detecting the antibody-cdn complexes formed.

15 34. The method according to claim 33 wherein the CDN is CDN-1.

20 35. The method according to claim 34 wherein the nucleotide sequence is depicted in Figure 3.

36. The method according to claim 33 wherein the CDN is CDN-2.

25 37. The method according to claim 36 wherein the nucleotide sequence is depicted in Figure 5.

38. The method according to claim 32 wherein the cell sample comprises T cells.

30 39. A method for detecting the expression of acdn gene in a biological sample comprising the steps of identifying the presence of RNA encoding thecdn.

52
-32-

40. The method according to claim 39 wherein the method for identifying the cdn-1 or cdn-2 mRNA is Northern blotting.

5 41 A method identifying cdn mRNA comprising the steps of:

- a) obtaining a cell sample;
- b) obtaining RNA from the cell sample;
- c) performing a polymerase chain reaction on 10 the RNA using primers corresponding to unique regions of the cdn; and
- d) detecting the presence of products of the polymerase chain reaction.

15 42 A method of modulating apoptosis-induced cell death comprising modulating the endogenous levels of a CDN.

20 43. The method according to claim 40 wherein the CDN is CDN-1.

44. The method according to claim 43 wherein the nucleotide sequence is depicted in Figure 3.

25 45. The method according to claim 42 wherein the CDN is CDN-2.

46. The method according to claim 45 wherein the nucleotide sequence is depicted in Figure 5.

30 47. The method according to claim 41 wherein the CDN is increased by modulating expression of an endogenous cdn gene.

48. The method according to claim 46 wherein the cdn gene expressed is encoded by a recombinant gene.

5 49. The method according to claim 48 wherein expression of the gene is under the control of an inducible promoter.

10 50. The method according to claim 49 wherein the cells are transfected *ex vivo* and further comprising the steps of reintroducing the transfected cells into the animal.

15 51. The method according to claim 50 wherein the cells are T lymphocytes.

52. The method according to claim 49 wherein the recombinant gene is transfected into cells *in vivo*.

20 53. A method of treating apoptosis in a patient in need thereof comprising administering a therapeutically effective amount of CDN.

25 54. The method according to claim 53 wherein the CDN is CDN-1.

55. The method according to claim 54 wherein the nucleotide sequence is depicted in Figure 3.

30 56. The method according to claim 53 wherein the CDN is CDN-2.

57. The method according to claim 56 wherein the nucleotide sequence is depicted in Figure 5.

54
-34-

58. The method according to claim 53 wherein the CDN is administered for any indication for which superoxide dismutase has been indicated.

5

add
a3

10

15

20

25

30

35